traxon

Media Tube®

INSTALLATION GUIDE

V1.3

Cover:
Media Tube® RGB/CW/WW Direct View
Media Tube® RGB/CW/WW Diffused

traxon

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For your own safety and that of the product, please read this installation guide carefully before beginning setup and installation.

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1. INTRODUCTION

1.1 General

MEDIA TUBE® RGB DIRECT VIEW (IP67-rated)	MEDIA TUBE® RGB DIFFUSED (IP66-rated)	Length (mm)	Maximum number of pixels (PXL)
TU.CR.0314002	TU.DR.0314002	295	12
TU.CR.0014001	TU.DR.0014002	495	20
TU.CR.0114001	TU.DR.0114002	995	40
TU.CR.0214001	TU.DR.0214002	1495	60

MEDIA TUBE® DIRECT VIEW (IP67-rated)		MEDIA TUBE® DIFFUSED (IP66-rated)		Length (mm)	Maximum number of pixels (PXL)
Cold White	Warm White	Cold White	Warm White		
TU.CR.0364003	TU.CR.0374003	TU.DR.0364003	TU.DR.0374003	295	12
TU.CR.0064003	TU.CR.0074003	TU.DR.0064003	TU.DR.0074003	495	20
TU.CR.0164003	TU.CR.0174003	TU.DR.0164003	TU.DR.0174003	995	40
TU.CR.0264003	TU.CR.0274003	TU.DR.0264003	TU.DR.0274003	1495	60

Media Tube® is an IP66/IP67-rated slim LED tube for any wall or façade media lighting. Available in 295mm, 495mm, 995mm, and 1495mm lengths, the simple but robust construction, allows up to 10m of tubes to be daisy chained on a single power run.The tube is controllable by DMX512 / e:pix / DVI capable with auto-adddressing to the next tube in the daisy chain.The Media Tube® is housed in aluminium extrusion with clear silicon potting for direct view or with a diffused PC cover.

Features:

- Available lengths: 295mm (12PXL), 495mm (20PXL), 995mm (40PXL), and 1495mm (60PXL)
- Direct View or Diffused
- Three color options: RGB, Cold White* and Warm White* (*available upon request)
- DMX512 / e:pix / DVI capable
- Daisy Chain System
- Auto-Addressing
- SMART CHIP™ Technology
- Outdoor Applications (Direct View IP67-rated; Diffused IP66-rated)

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1.2 Dimensions

FIG.1: Media Tube® Direct View

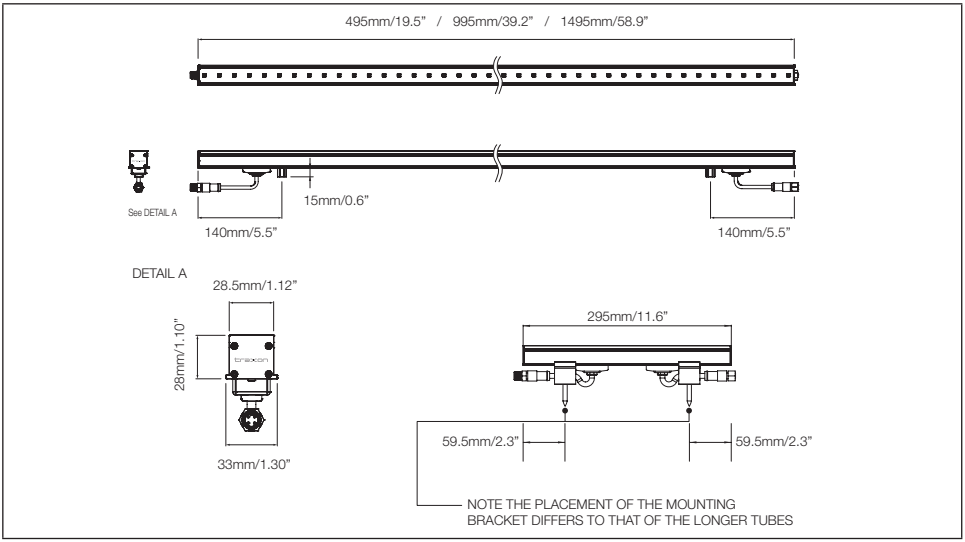
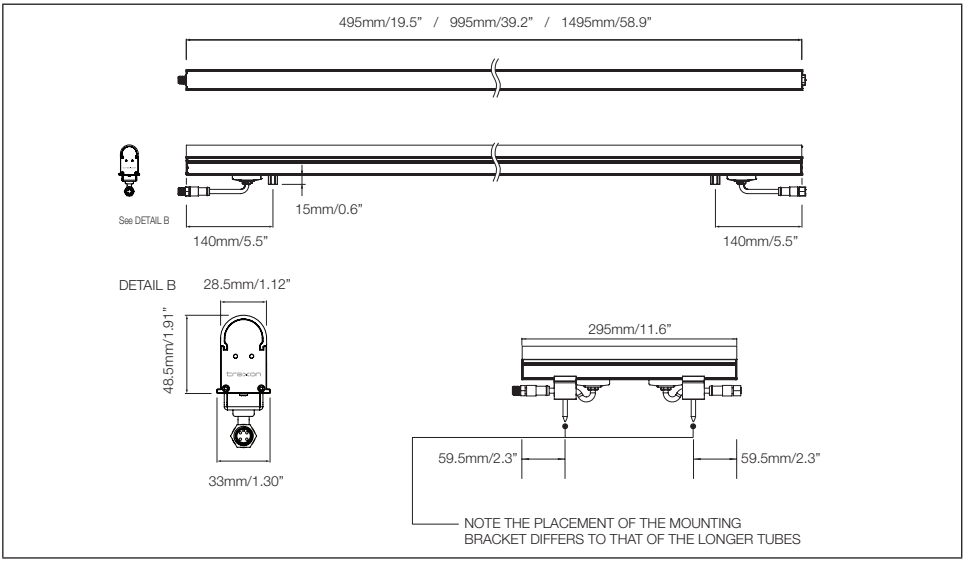


FIG.2: Media Tube® Diffused



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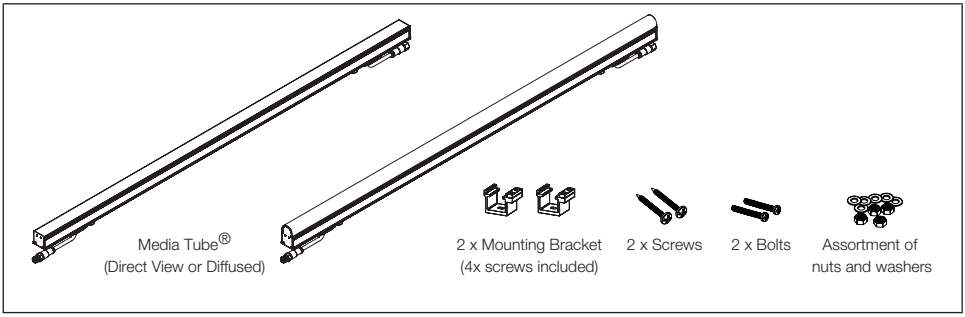
1.3 Packing Contents

FIG.3: Packing Contents



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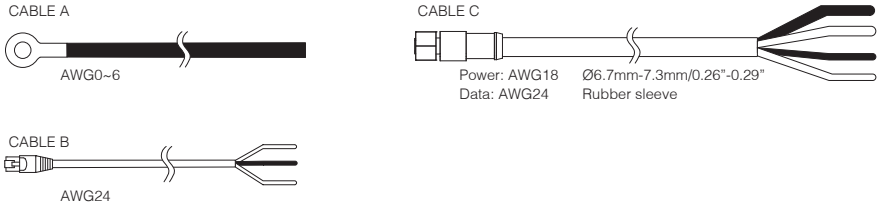
2. INSTALLATION

2.1 Points To Consider

Plan your installation before mounting the Tube. The following should be considered for a successful installation.

- Weather conditions and ambient temperature of installation site.
- Appropriate cable lengths (cable gauges described in below diagram). Please consult your local Traxon office or authorized agent for necessary aid.
- The number of Media Tubes® and appropriate LED Engines.
- DMX512/e:pix controller to be used to control the Media Tubes®.
- Distance between each Tube for thermal expansion and maintaining pixel pitch.
- There are two mounting methods to consider, plan mounting distances accordingly for whichever method is required.
- Proper surge protection.
- Number of standard LED Engines to be used.

FIG.4: Media Tube® Cable System



Cable A = Live power cable
(from PSU to Power Distribution lock)

Cable B = Data cable
(from VMC to Terminal Block)

Cable C = Starter cable
(From Terminal Block to first Media Tube® in chain)

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2.2 Pre-Installation Checks

2.2.1 Installation Checklist

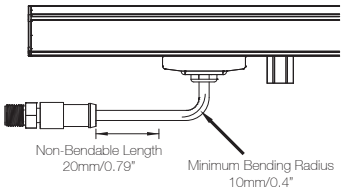
1. Prepare cables and all necessary accessories (Mounting Brackets, Waterproof M12 End Caps etc).
2. Perform functional check of Media Tubes®. Take care not to damage cables/connectors during pre-installation checks.
3. Ensure all pre-installation checks laid out below have been followed.
4. Mount the Media Tubes® on-site. If the installation is to be left uncompleted overnight, place all non-connected LED Engines and Media Tubes® in an indoor environment.

Ensure all the Interconnection Cables, Media Tubes® and LED Engines are initially stored in a dry area to guarantee the complete sealing of the system from water before installation.

2.2.2 Cable Bending

To reduce stress induced on Media Tube® lead cables, please adhere to the Minimum Bending Radius of 10mm (0.4”) and the Non-Bendable Length of 20mm near the connector. It is recommended to install lead cables through conduits/trunking.

FIG.5: Minimum Cable Bending and Non-Bendable Length requirement



NOTE: Water ingress incurred due to cable twisting or excess cable bending will not be under warranty by Traxon Technologies.

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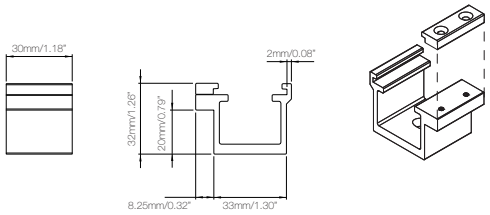
2.2.3 Mounting Bracket

If the Mounting Bracket method of installation is used, it is recommended to fix it to the installation surface before the Media Tube® is secured to the bracket

FIG.6: Media Tube® Mounting Bracket



2.2.4 Installation Sequence

1. Plan for any possible bending of cables (see Section 2.2.2).
2. Measure the correct distances for Mounting Brackets.
3. Connect Media Tubes® with LED Engines in the daisy-chain manner outlined in the System Diagram to form large installations.
4. Perform functional check on all Media Tubes® and inspect cables and Mounting Bracket for any damage. Check for any abnormalities with the control signal.
5. Report any functional defect found to your nearest Traxon Technologies office. DO NOT attempt to install Media Tubes® with functional defects on-site.

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2.3 On-Site Installation

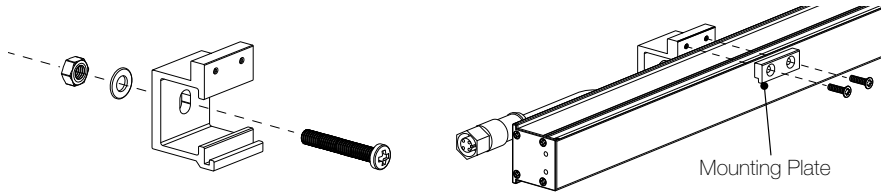
- DO NOT attempt installation in wet or severe weather conditions.
- DO NOT leave and expose any Media Tubes® or LED Engines unconnected under wet/raining or snowing environment.
- IP failure induced by stressed/damaged cables during or after installation will not be under warranty by Traxon Technologies.
- ALWAYS keep the cables protected from sharp objects and ensure no damage is generated on the cable.

Failure to keep Media Tube® within the operating temperature range of –30°C to 50°C (–22°F to 122°F) and storage temperature range of –40°C to 70°C (–40°F to 158°F) will void the product's warranty.

2.3.1 On-Site Installation

1. Fix Mounting Bracket to installation surface with anchor bolts, if Mounting Bracket method is being used.
2. Attach Media Tube® to Mounting Bracket and affix Mounting Plate (see below diagram). If using the Mounting Studs option, simply secure using anchor bolts (see Mounting options for the Tube FIG.10).

FIG.7: Fixing the Mounting Bracket to installation surface



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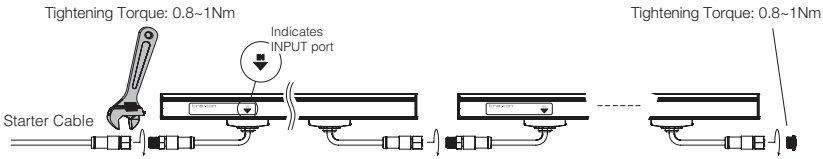
3. The Tubes are interconnected using the IN and OUT cables on each end of the tube. Screw the connectors tightly for a water-tight seal. Below diagram shows the Tube connections. Always remember to affix an M12 Waterproof End Cap (sold separately) for the OUT connector of the final Tube in each daisy chain. See System Diagram for details.

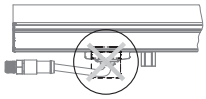
FIG.8: Media Tube® Connections


Tightening Torque: 0.8~1Nm
Indicates INPUT port
Tightening Torque: 0.8~1Nm
Starter Cable
Push in connectors and screw tightly for a good seal.
End cap for OUT connector of last tube.

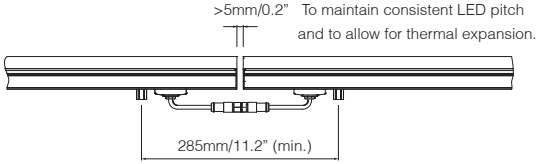
NOTE: Any water ingress incurred due to improper installation of cable connectors or Waterproof M12 End Caps will not be under warranty by Traxon Technologies.

4. Be sure not to compress the IN/OUT cables (see Requirements Of Cable Bending). NOTE: To keep LED pitch consistent and allow for thermal expansion, be sure to keep a minimum distance of 5mm (0.2") between consecutive Media Tubes® (see below diagram).

FIG.9: Fixing the Mounting Bracket to installation surface



Do not compress IN/OUT cables.



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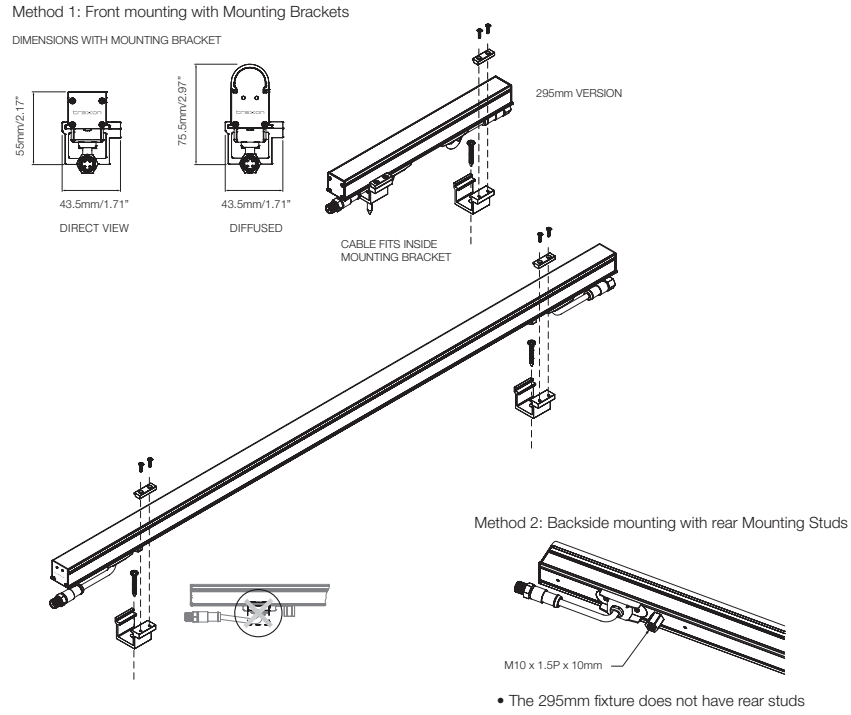
5. Connect Tubes in the daisy-chained manner as detailed in the System Diagram.

FIG.10: Mounting options for the Tube



• The 295mm fixture does not have rear studs

6. The first Tube of the daisy-chain group has to be connected to the control system via the starter cable.

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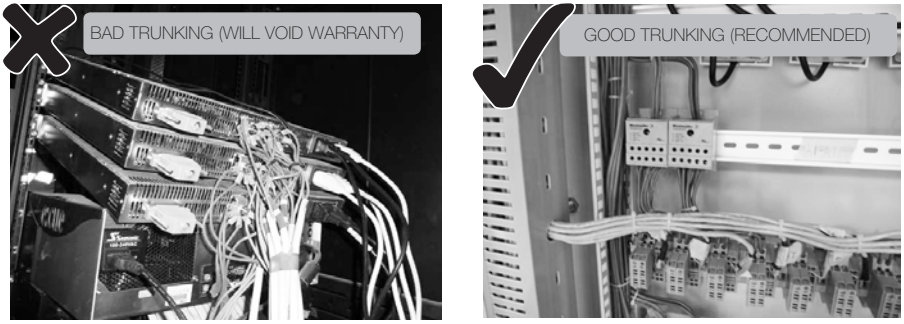
7. Starter cables, Data and Power cables, and video fiber optic cables have to be installed through conduits/trunking.

FIG.11: Bad vs. Good trunking. It is recommended to follow the example on the right.



8. Set up the control system indoors as detailed in the Wiring Diagram and connect to the Media Tubes® outside. Start up each unit and verify correct function.

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3. SAFETY AND OPERATION

- CAUTION - Unplug the power supply from the mains power before connecting any cables as this can damage the products.
- CAUTION - Avoid looking directly into the LED light source at close range for your own safety.
- Persons installing this product should make sure:
    1. The installation complies with all applicable codes, state and local laws, ordinances, standards and safety regulations.
    2. The installation environment is carefully studied and suitable surge protection measure(s) is taken.
    3. He or she is qualified for the handling of electrical equipment.
- Do not attempt to install or use the product until installation instructions and safety labels are fully understood. This product is designed for indoor and outdoor use.
- Ensure product operates within the specified temperature range. (Refer to 7. TECHNICAL SPECIFICATION for more details.)
- Do not attempt to open the product. Not user serviceable.
- Do not use the product if any part of it, or the power cables are damaged.
- Only use product for specified voltage, do not exceed. (Refer to 7. TECHNICAL SPECIFICATION for more details.)
- Always maintain connection to ensure waterproofing.
- If the product has been subjected to drastic temperature variances, for example, following transportation, do not connect the fixture until it has reached room temperature, as moisture condensation may cause electric shock and product damages.
- When installing the products and system power supplies, please ensure they will not be exposed to moisture and extreme heat (and direct sunlight for outdoor products). Besides, keep a clean operating environment for the fixtures and system power supplies.
- Please study this Installation Guide thoroughly and check the latest Technical Specification Sheets available from the Traxon website www.traxontechnologies.com before setup.
- Any non-compliance of the Installation Guide will void the Traxon warranty.

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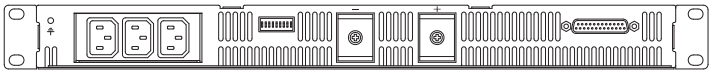
4. SYSTEM CONFIGURATION

4.1 MEDIA TUBE® CONNECTION COMPONENTS

The Media Tube® is connected using a daisy chain system with power and data on the same cable. Below diagram shows some typical components for Media Tube® system.

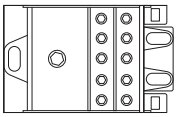
FIG.12: Connection Components for Media Tube® System



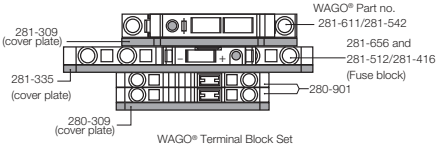
LED Engine 1000W 48V - single terminal
PS.IE.0011100

PSU Rack for LED Engine 1000W 48V
(Houses 3 x PS.IE.0011100)
PS.AC.0500100

LED Engine 240W 48V Outdoor
PS.OB.0011002

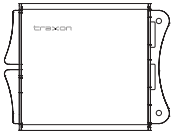


1939460000
Weidmüller Terminal Block
TU.AC.0000300



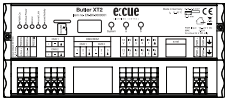
WAGO® Terminal Block Set
TU.AC.0000201

M12 Starter Cable
Standard Length
TU.AC.0001201 – Open wire, 5m
TU.AC.0000501 – Open wire, 20m
TU.AC.0001111 – Open wire, 35m
Custom Length also available

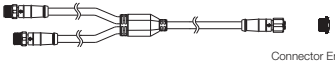


Video Micro Converter (DMX/e:pix)
160185

M12 Interconnection Cable
Standard Length
DO.AC.1000001 – 140mm
TU.AC.0200201 – 1.5m
TU.AC.0200101 – 4m
Custom Length also available



Butler XT2
EN.BX.0000001



M12 Power/Data Injector Cable
TU.AC.0000101

Connector End Cap M12
DO.AC.0000800

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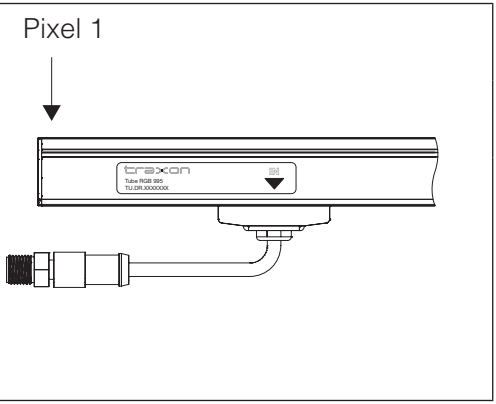
4.2 LED CONTROL

The LEDs on the Media Tube® RGB are controlled by DMX512/e:pix. Each pixel on the Tube uses three (3) channels, for R, G, and B. Pixel number 1 is at the end of the Tube near the IN connector, and it uses the first three channels of the Tube. The Tube start address is the next address from the previous tube in the daisy chain.

Pixel n	Control Channel Number
R	Tube start address +3(n-1)
G	Tube start address +3(n-1) + 1
B	Tube start address +3(n-1) + 2
Where: n is pixel number along the Tube. (Pixel 1 is located at end, near the IN connector.) NOTE: This is not applicable for Media Tube® CW or Media Tube® WW.	



Note: Pixel 1 is in the same location for Media Tube® CW and Media Tube® WW.

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FIG.13: Media Tube® RGB Typical System Connection Example

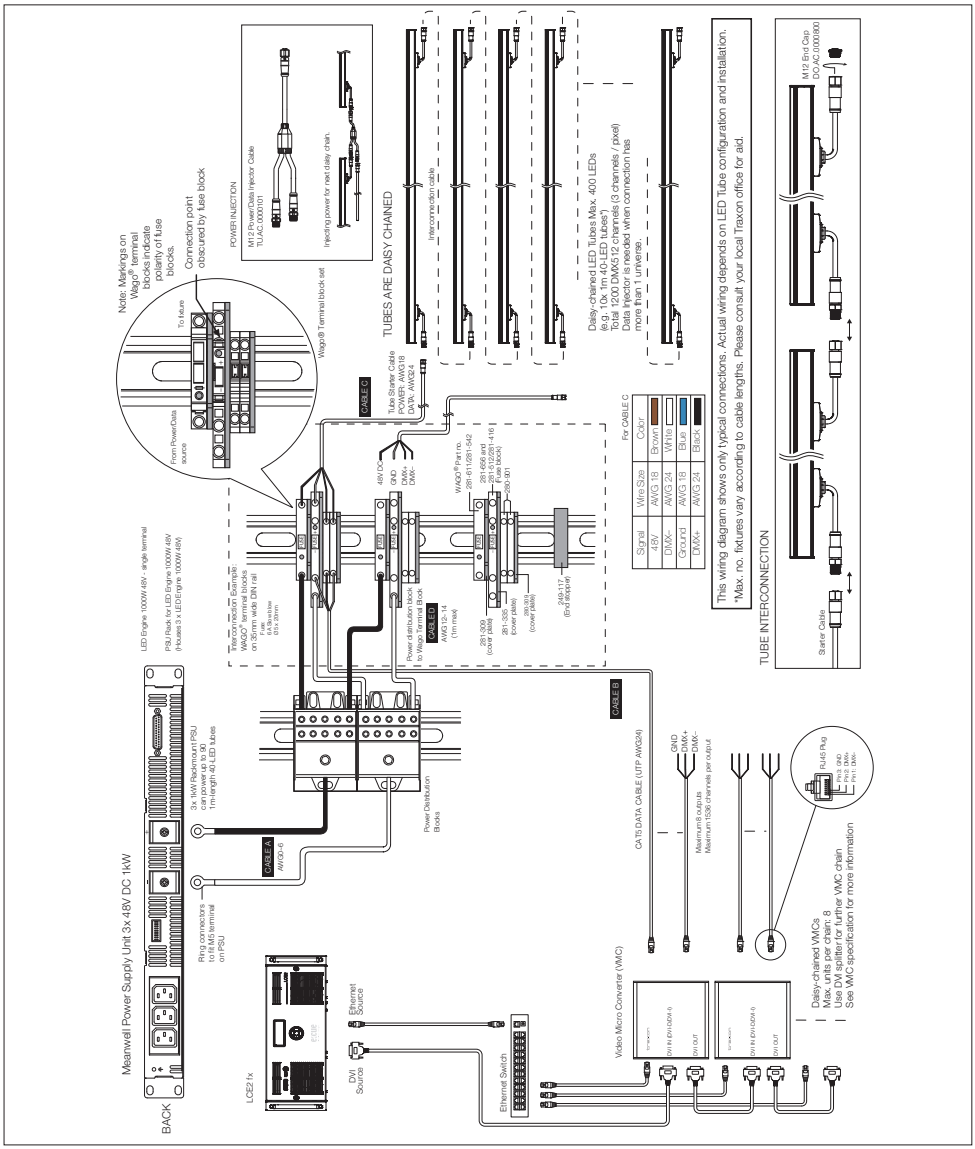
Meanwell Power Supply Unit 3x 48V DC 1kW
BACK
LCE2 fx
DVI Source
Ethernet Source
Ethernet Switch
Video Micro Converter (VMC)
Power Distribution Blocks
CABLE A AWG0-6
CABLE B
CABLE C
CAT5 DATA CABLE (UTP AWG24)
Maximum 5 VMCs
Maximum 1536 channels per OUBUT
RJ45 Plug
Pin1: Data+
Pin2: Data-
Pin11: Data+
Pin12: Data-
Daisy-chained VMCs
Max. units per chain: 8
Use DMX splitter for more than 8 VMC chain
See VMC specification for more information
Ring connectors to fit M5 terminal on PSU
3x 1kW Peak/mean PSU can power up to 90 1m-length 40-LED tubes
Note: Markings on Wago® terminal blocks indicate polarity of fuse blocks.
Connection point obscured by fuse block
To Future
From Power/Data source
Wago® Terminal block set
POWER INJECTION
M12 Power/Data Injector Cable TLAC.0003.01
Injecting power for next daisy chain.
TUBES ARE DAISY CHAINED
Interconnection cable
Daisy-chained LED Tubes Max. 400 LEDs (e.g. 10x 1m 40-LED tubes*) Total 12,000 DMX512 channels (3 channels / pixel) Data flow direction should remain connection has more than 1 universe
This wiring diagram shows only typical connections. Actual wiring depends on LED Tube configuration and installation. *Max. no. fixtures vary according to cable lengths. Please consult your local Traxon office for aid.
TUBE INTERCONNECTION
M12 End Cap D.O.AC.0003.00
Starter Cable
Tube Starter Cable POWER: AWG18 DATA: AWG24
For CABLE C
Signal | Wire Size | Color
48V | AWG 18 | Brown
DMX- | AWG 24 | White
Ground | AWG 18 | Blue
DMX+ | AWG 24 | Black
LED Engine 1000W 48V - single terminal
PSU Rack for LED Engine 1000W 48V (Includes 3 x LED Engine 1000W 48V)
Traxon custom DIN rail with WAGO® terminal blocks on 35mm wide DIN rail
WAGO® Part no. 281-611/281-542
281-656 and 281-612/281-416
281-687/281-604
281-309 (cover plate)
281-335 (Power plug)
280-301
280-311 (cover plate)
280-317 (End plate)
48V DC
GND
DMX-
DMX+
Power distribution block to Wago Terminal Block
AWG0-6 (1m max)

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FIG.14: Media Tube® RGB System 240W Outdoor Connection Example

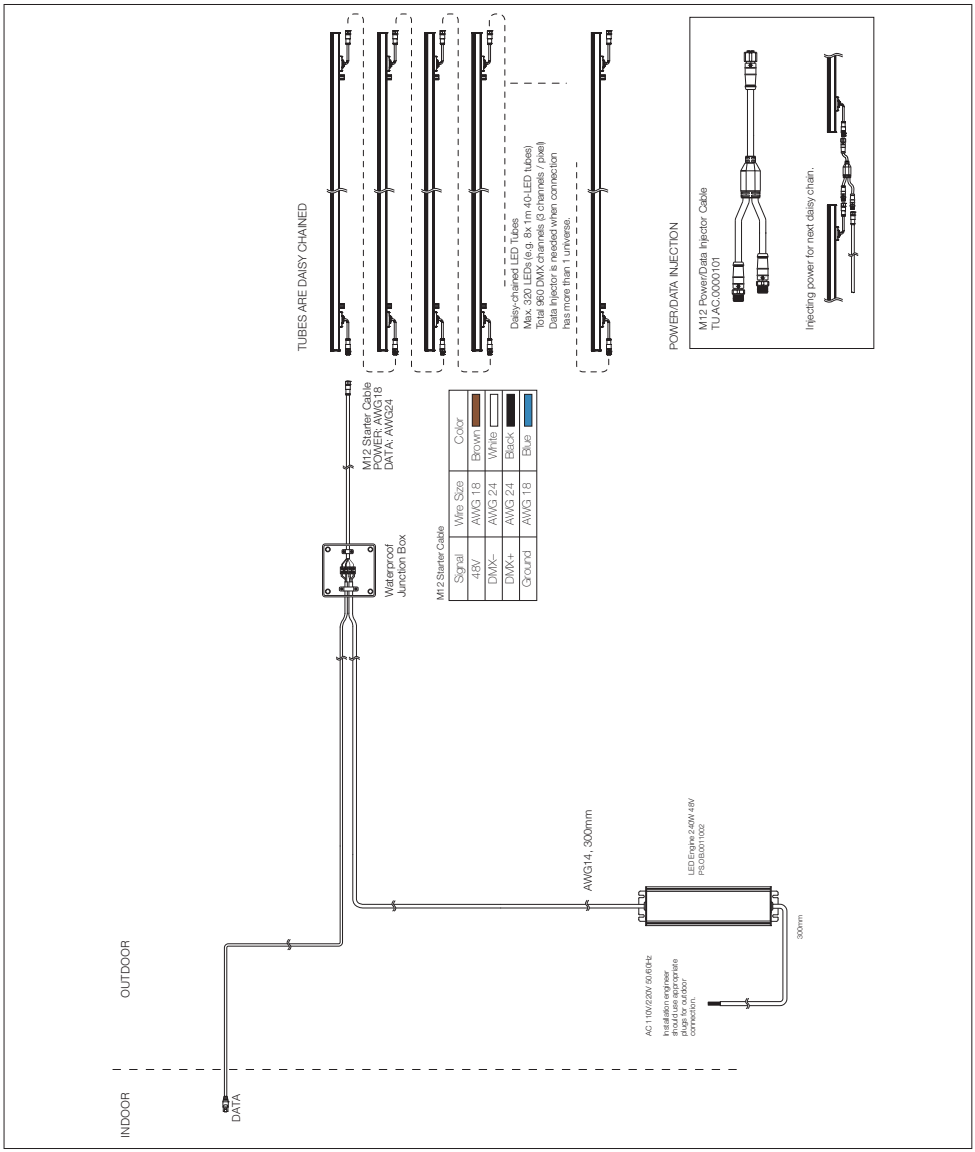

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FIG.15: Media Tube® CW/WW Typical System Connection Example

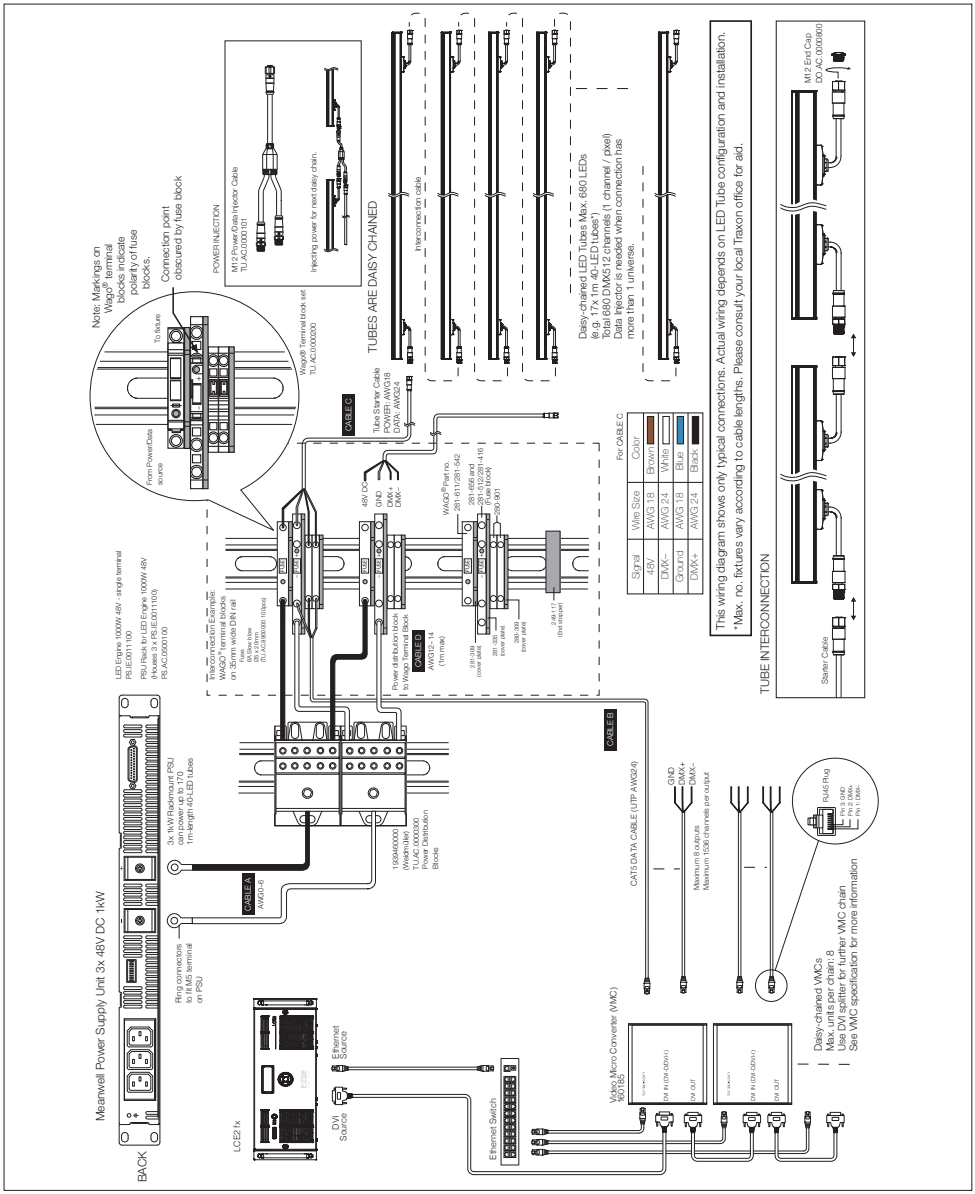

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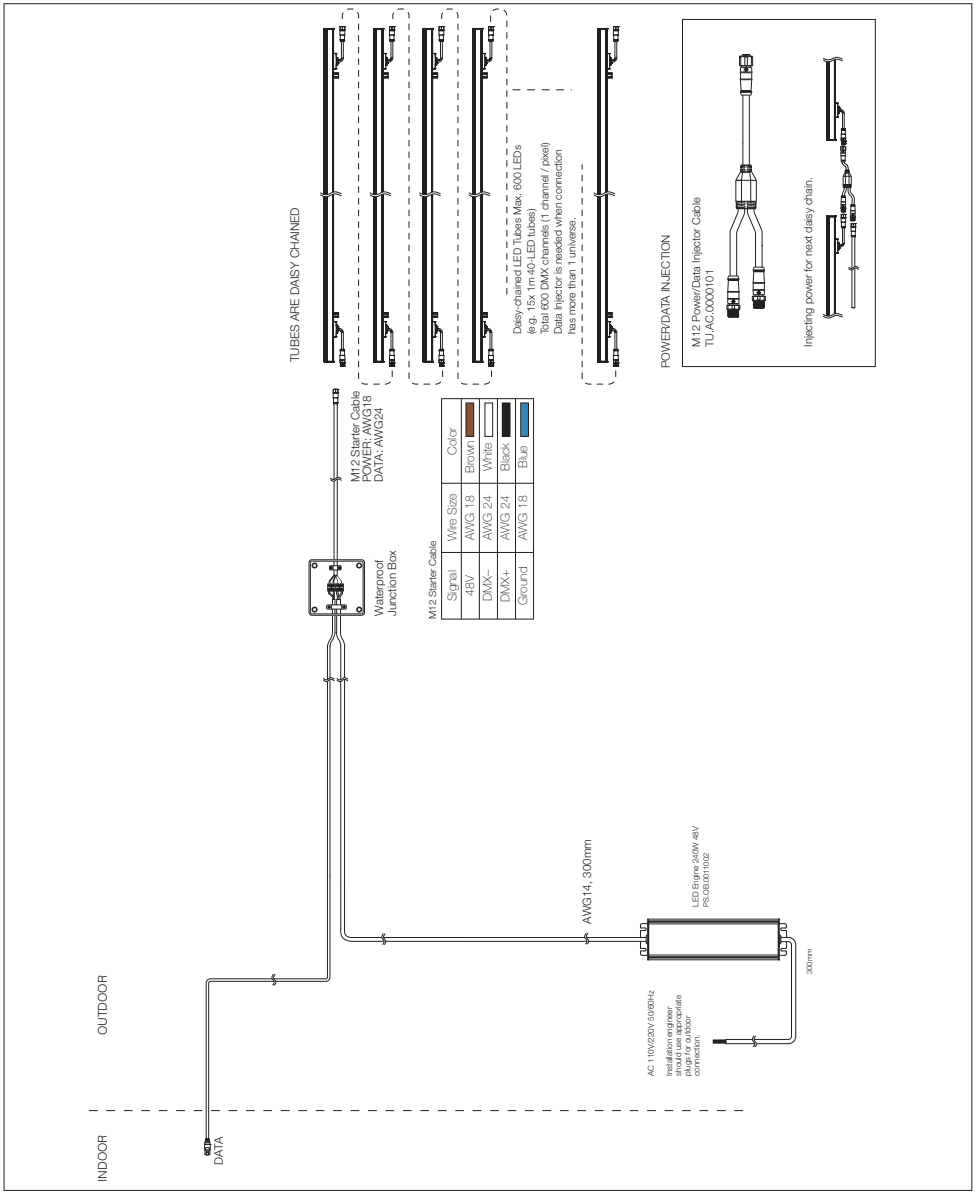
FIG.16: Media Tube® CW/WW System 240W Outdoor Connection Example



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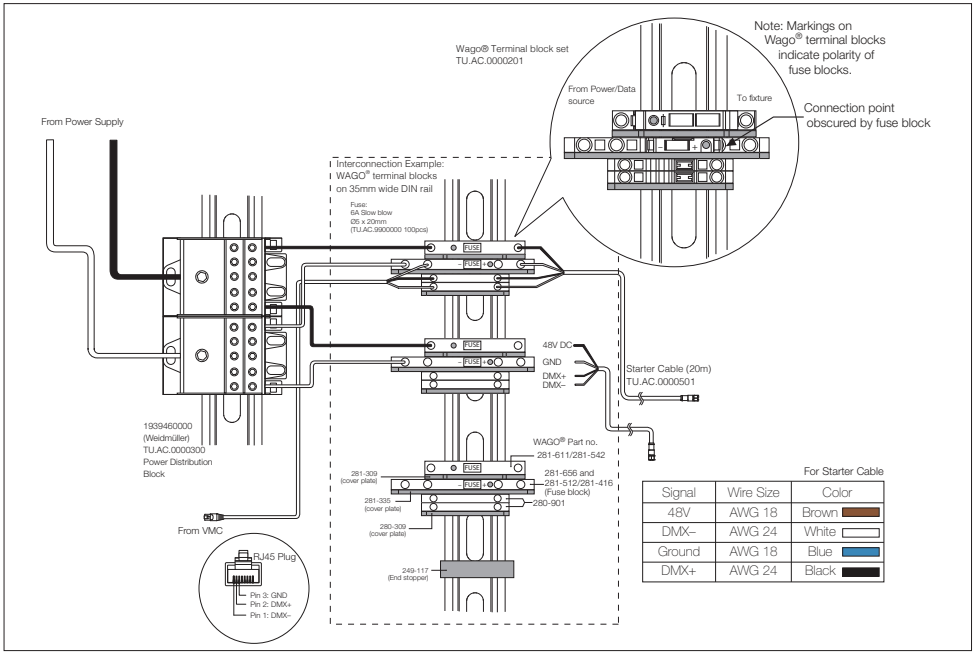
4.3 WAGO TERMINAL BLOCK

FIG.17: Wago Terminal Block Wiring



For interconnection from the power/data source to the fixture, a Weidmüller/Wago® combination is used. Polarity of Wago® fuse blocks are indicated on the top of the block. Always keep the polarity consistent, with the Live side leading to the fixture. The Indicator Lamp will trigger if there is no fuse or if the fuse has blown.

CAUTION: Ensure the polarity of the wago terminal blocks are correct (as shown in above diagram) to avoid causing damage to the fixture.

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5. CARE AND MAINTENANCE

Traxon™ products are of superior design and quality and should be treated with care. The recommendations below will help fulfill any warranty obligations and gain good use and longevity from the products.

- Do not attempt or use the product(s) until you read and understand the installation instructions. Failure to adhere to these instructions could result in serious injury or property damage.
- Do not use product(s) if cables are damaged.
- Do not connect cables and connectors when wet or in wet area. Moisture on bare connectors can cause electric shock and damage to product(s).
- Do not use product(s) in extreme heat environment. Ensure there is sufficient airflow and use cool air circulation if required.
- Do not drop, knock, or shake product(s). Rough handling can damage the electronics and void the warranty.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean products. Wipe with a damp cloth on housings and a dry cloth on electronics to remove dirt or dust.
- Do not attempt to service or repair the product(s) unless done by an authorized service personnel. Contact your local Traxon office or distributor for details.
- If the product is not working as specified, please contact your nearest authorized service center or Traxon Technologies office for assistance.

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6. TROUBLESHOOTING

CAUTION: Ensure power supply is OFF when disconnecting / connecting cables.

Problem	Cause	Possible Solutions
Product does NOT light up after installation	Incorrect power connection	• Check Mains Power • Check power supply leads and wire connections • Ensure output wires are connected with proper polarity • Check Wago terminal block fuse. If Indicator Lamp is on, either the fuse is not present or it is blown. • Check if LED Engine's secondary output is working as specified.
Shadowing	Light source covered	• Check for cables, wires or unwanted debris covering LED light source
Modules are dim	Excess products connected	• Ensure the power supplies are not overloaded due to an excess of products connected
Flickering	Incorrect power input/ Excess products connected	• Ensure the input voltage is correct • Ensure the power supplies are not overloaded due to an excess of products connected

If problems persist or the product is not working as specified, please contact your nearest authorized service center or Traxon Technologies office for assistance.

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7. TECHNICAL SPECIFICATION

Media Tube® RGB

Color Range:	16.7 million additive RGB colors with variable intensity
Light Source:	12 / 20 / 40 / 60 Ultra Bright RGB SMD LED
Beam Angle:	120° (direct view); approx. 150° (diffused)
Power Input*:	48V DC
Power Consumption:	7.5W max. / 11W max. / 22W max. / 33W max.
Weight:	0.59kg / 0.8kg / 1.6kg / 2.3kg (direct view) 0.48kg / 0.65kg / 1.3kg / 1.95kg (diffused)
Operating Temperature:	–30°C to 50°C (–22°F to 122°F)
Storage Temperature:	–40°C to 70°C (–40°F to 158°F)

Media Tube® CW/WW

Color Temperature:	6500 K (Cold White) 2700 K (Warm White)
Light Source:	12 / 20 / 40 / 60 Ultra Bright SMD LED
Beam Angle:	120° (direct view); approx. 180° (diffused)
Power Input*:	48V DC
Power Consumption:	4.5W max. / 6W max. / 12W max. / 18W max.
Weight:	0.59kg / 0.8kg / 1.6kg / 2.3kg (direct view) 0.48kg / 0.65kg / 1.3kg / 1.95kg (diffused)
Operating Temperature:	–30°C to 50°C (–22°F to 122°F)
Storage Temperature:	–40°C to 70°C (–40°F to 158°F)

*For use with TRAXON LED Engine 1000W 48V Indoor (PS.IE.0011100), LED Engine 240W 48V Outdoor (PS.OB.0011002) power units.

As with all electronic devices, LED output degrades over time - a term called lumen depreciation. This also explains why it is nearly impossible to expect photometric performances of two LED products with different service life spans to be the same. The rate of LED degradation is a complex function of many factors such as operating efficiency, duration of continuous operation, and operating conditions (e.g. ambient temperature).

Because LEDs are semiconductor devices, their performances are subject to inherent variability commonly found in semiconductor industry. To improve consistency in performance across the same product, LED manufacturers “sort” LEDs into bins according to different

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preset parameters, such as forward driving voltage, illumination, etc. Whereas binning is a sorting function, it is not a correction process. Inherent variability in the manufacturing process always results in different binning distributions according to different production lots. Traxon uses automatically binned LEDs on its products, thereby minimizing output variations within the model range.

8. WARRANTY STATEMENT

Traxon Technologies warrants its Products against material or workmanship defects for a period of three (3) years from date of purchase, provided that the purchased items are used under the conditions stated in this user manual.

Please refer www.traxontechnologies.com for all warranty terms and conditions.

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